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ABSTRACT

The job functions, job goals, and career paths of 108 university research administrators randomly selected from the membership of the National Council of University Research Administrators were studied. A cluster analysis that included job functions, percentage of time in job functions, and job goals separated the respondents into three clusters: information specialists, research developers, and research managers. Some job functions appeared in more than one cluster (information regarding funding agencies, budgeting, planning proposals, contacting funding agencies, and contract and grant management), suggesting that perhaps a common core of subject matter and skills exist for research administrators. Each of the clusters ranked the goal "assuring compliance with university policies" as the most important for research administration. The goals of "stimulating research and project activity" and "increasing the number of grant awards" were ranked as second and third, while "developing faculty careers" was ranked last (seventh). Respondents' job histories for the two most recent positions were displayed on a frequency table indicating the job categories that best described their previous positions. Of the 96 who responded to the question regarding the most recent position, 41 (43 percent) had been employed as research administrators immediately prior to their present position. Thirty-eight had been in higher education research administration. For the 55 (57 percent) who had not been research administrators in their most recent position, the largest group (38 percent) had been in general higher education administration. A bibliography is appended. (SW)

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CAREER PATTERNS, JOB FUNCTIONS, AND ROLE PERCEPTIONS OF UNIVERSITY RESEARCH ADMINISTRATORS

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CAREER PATTERNS, JOB FUNCTIONS, AND ROLE PERCEPTIONS
OF UNIVERSITY RESEARCH ADMINISTRATORS

The original impetus for the research reported in this paper was the observation that professional meetings of so-called "research administrators" were peopled with an amazing melánge of participants. The observed differences among those whose work is associated with stimulating, administering, or monitoring grant and contract activity are suggested by the variety of levels of education (ranging from high school diplomas to doctoral degrees), job titles (e.g. Vice-Provost for Research, accountant), tasks performed (e.g. developing policies affecting researchers to editing grant proposals), and perceived roles (e.g. guardian of university resources to faculty development).

These observations raise questions about what it is that research administrators do, whether they perceive their roles as leaders in research stimulation, and whether, in fact, there is a career called "research administration." These questions coupled with concern in the higher education community regarding non-teaching careers for recent Ph.D.'s (Solomon, 1979) and with urgings that each subset of higher education professionals examine its own profession (Mathis, 1979), set the stage for the study reported here.

A review of the literature shows that inquiry regarding research administration is in the initial stage and suggests a need for baseline information that defines and describes research administration. Such data will provide the basis for asking if research administration is either a career or a profession. This study begins this process by assessing university research administrator job functions, job goals, and career paths.

Resulting descriptive data will assist individuals in making decisions regarding job/career possibilities, will assist offices in defining positions and hiring research administrators, and will provide baseline information that captures an emerging profession at this time.

Framework

To provide a framework for the study, definitions of research administrator job functions and roles as well as relevant studies of research administration as a career were examined. Driver's (1977) concept that careers fall into one of four patterns was adopted.

Roles of Research Administrators

Woodrow's (1978, 1980) comprehensive definition of research administrators as "those who facilitate and advance the performance of research within an institution" (1980, p. 230) presents a global view of the role of research administrators. He adds specificity to his definition by recommending a cradle to grave philosophy in which research administrators assist in planning a project for external funding, suggest possible sponsors, assist in proposal preparation, build interdisciplinary teams, and assist in post-award activities such as hiring personnel, working with patents and copyrights, and handling business matters. This philosophy has been incorporated into a major professional organization, the Society of Research Administrators, which requests members to designate their job functions according to a list of 21 codes that covers this range of activities.

While Woodrow defines the research administration role both very generally then in terms of tasks, Broseghini (1980) discusses the knowledge base required,

particularly for medical research administrators, and Foster (1980) focuses on skills, calling for creative and imaginative problem-solving to help both institutions and agencies facilitate research more effectively and to broker among researchers, institutional administrators, sponsors and support offices such as fiscal accounting. In the far-reaching view of research administrator functions, Hensley defines the university research administrator as "the architect of the university's future," (1980, p. 293) suggesting that research administrators will increasingly be setting university priorities, planning, and allocating resources.

While the role descriptions are general and theoretical, one empirical study describes research administrators using membership data from the 450 Society of Research Administrator members in the Higher Education, Non-Health Related category (Rodman, and Dingerson, 1979). The analysis showed that research administrators are most likely to have bachelor's degrees (34.6%) or doctoral degrees (29.2%); that only four of 21 job codes involved more than 28% of the membership (Grant and Contract Management, Proposal Preparation and Review, Budgeting, and University Management) while the remaining 17 tasks involved from 1.3% to 18.9% of the population. A chi-square analysis indicated that those with Ph.D.'s were more likely to select research administration, research and project planning, or technical coordination as job tasks while those with bachelor's degrees were more involved with technical areas such as property management, accounting, and budgeting. The study suggests that a career in research administration may have at least two different sets of preparation and job concerns.

Assuming that research administration is a career, Sladek (1980) addresses the career problems of research administrators. Using the entire SRA membership,

a group that includes research administrators employed by industry and health-related institutions as well as higher education institutions, Sladek asked respondents to rate the severity of career problems. The demographic description of his respondents suggests further implications for a study of careers. Although men and women respondents were divided about into the same age groups, men's positions and salaries were higher. Further, men and women had exhibited two separate career paths, with women frequently beginning in clerical jobs and moving through staff assistant to specialized grant and contract administration. Men, on the other hand, were more likely to have moved from a research or professional position into administration, again suggesting more than one career path.

Careers

As a framework for assessing these hunches regarding career paths in research administration, Driver's (1977) conception of careers as following four different possibilities was adopted. Driver moves beyond standard goal-oriented definitions of "career" that imply an orderly progression involving an entire working life (Mathis, 1979). He offers four concepts: (1) the transient who moves from position to position in no apparent order; (2) the steady state, such as an attorney, who selects a "job" and stays with it permanently; (3) the linear, or standard upwardly mobile ladder; and (4) the spiral, a cyclical pattern in which an individual develops in one area then moves on to a new, perhaps related area. In addition to using these concepts to describe individual patterns, Driver suggests that some kinds of organizations (1978) are more accepting of some kinds of career concepts, and has suggested that the categories be applied to various vocational fields (1977).

Design and Methodology

The survey was selected as the most effective means of obtaining the desired information. The instrument elicited demographic data and queried respondents in the three areas of interest: job histories, job functions, and job goals.

Instrument Preparation

A pilot study examining job histories and job goals had been conducted during 1979. The survey had been distributed to a total of 70 NCURA members employed by eight universities. Office directors had agreed in advance to distribute surveys to their staffs. No effort was made to randomize the sample or to select according to institutional size and type. The assumption governing the pilot testing distribution was that research administrator functions would have some commonality regardless of the research administrator's institutional affiliation. In addition, any institutional variations would be suggested by this approach.

The initial data suggested that research administrative job functions clustered into three general areas: pre-award, post-award, and continuing research services. Pre-award seemed more directed towards research stimulation and post-award more focused on institutional controls. These categories were incorporated into the final survey instrument.

The data indicated that slightly more than one-half the respondents (56%) had held a research administration position in their most immediate previous jobs. With two jobs prior, only 35% had been research administrators. The preliminary data also suggested a number of differences in training, level of education, and kind of position held. The final instrument was revised in light of these findings.

To determine job history, respondents were asked to list job titles and categories for their two positions prior to the one presently held. Job functions were identified using a modification of the Society of Research Administrators (SRA) 21 job codes. Based on the pilot study (conducted in 1979), codes had been modified for clarity and completeness. In addition, respondents were asked to assign relative importance to each reported job function by estimating the percentage of time spent in that activity. Respondents were asked to list no more than five job functions.

Sample Selection

Because the National Council of University Research Administrators (NCURA) is the only professional organization with a membership composed solely of university research administrators, membership of that organization was selected for study. A random sample of just over 400 was selected from the some 1400 members. The data analyzed here are based on the first wave of responses (N = 108) which constitutes 27% of the sample.

Analysis

Two areas were examined in this initial analysis: career paths and job functions. Cluster analysis using both SAS and SPSS packages grouped respondents into distinct categories so their characteristics could be examined by subgroup. In each case, the criteria for selecting clusters was that the distance between clusters was greater than the distance within the cluster, thus establishing the uniqueness of each cluster. Clusters selected for analysis were further required to include at least 10% of the respondents. A number less than that was expected to be too small to be representative.

To ascertain the most effective analysis of the job entitled research administration, respondents were clustered first on their reported job functions then on their job goals (or perceptions of their role), and finally on reported

job functions (which were weighted by the percentage of time assigned to them by respondents) as well as on job goals. The final cluster, as expected, proved to sharpen distinctions among groups. The assumption that the most complete job definitions include tasks as well as perceptions of those tasks was supported by the cluster analysis.

To determine career patterns, a frequency distribution of job categories for each of the two most previous positions was examined. Those individuals whose most immediate position had been in research administration were further tracked to determine their job history. Emerging patterns were categorized using Driver's (1977) four career concepts.

Description of Data

The data description section contains three parts: job functions, respondents and their organizations, and career paths.

Description of Respondents and Their Organizations

Respondents were 73% male and 27% female; 94% Caucasian; and 63% age 45 or younger, with an additional 26% falling between the ages of 46 and 55. Twenty-two percent held bachelor's degrees, 27% held masters, and 47% held Ph.D.s or law degrees. The respondents had been in their present positions 4.5 years on the average (with a range of less than one year to 24 years). They earn just over $20,000 annually (with a range of from $10,000 to $60,000).

These research administrators work in offices that employ from one to 41 research administrators, with the largest percentage (23%) employing either one or three research administrators respectively. Most offices (79%) have university-wide responsibilities. Most (64%) ultimately report to an academic or research vice-president while 12% report to a fiscal vice-president and 9% report directly to the president.

Description of Positions

The cluster analysis that included job functions, percentage of time, and job goals separated respondents into three clusters. Together, the three clusters accounted for 76% (N = 82) of the respondents. To determine the distinctions among the groups, the job functions respondents had selected and the goal priority ratings were examined.

Although respondents in all three clusters shared the job function of providing information regarding funding opportunities (indicating that research administrators share a common pool of technical information), the clusters differed in their groups of job functions and goal priority ratings.

Job Functions. To identify the job functions of each cluster, the selected Research Administrator Activity Codes were rank ordered according to number of responses to each. (Note that some codes had no responses.) The codes that include 50% or more of the respondents within that cluster were taken as the criterion for selection as a descriptor. Then descriptors that included 30% or more of the respondents were also examined to see if the initial characteristics would be reinforced.

Group I (Table 1) appears to consist primarily of information processors, those who primary tasks are to share information regarding funding opportunities and to contact funding agencies. Fifty percent or more of the respondents within Group I selected each of these codes. If the criterion is reduced to 30% or more of respondents, then the tasks expand to include budgeting assistance and other general activities. These last two categories suggest an administrative assistant role that supplements the information sharing role.

Group II consists of research developers, whose primary function appears to be stimulating proposal development (Table 1). With 50% used as selection

TABLE 1

PERCENTAGE OF JOB FUNCTION RESPONSES
BY CLUSTER

Code	Function	Cluster I	Cluster II	Cluster III
01	Provide Information Regarding Funding Opportunities	59%	64%	73%
02	Assist in Planning Research or Project Proposals		55%	47%
05	Assist in Budgeting Proposals	36%	51%	40%
12	Contract and Grant Management		42%	33%
14	Manage Internal Research Funds			33%
20	Contact with Funding Agencies	50%	44%	
21	University Management - General			53%
24	Other - General Activities	32%		

criterion, the primary tasks include providing funding information with a higher percentage reporting this than in category I, assisting in budgeting proposals (a back-door approach to research planning), and assisting in planning research or project proposals. At the 30% selection level, the tasks include contact with funding agencies (which, in this context may be a research development activity), and grant and contract management - the standard description for coping with post-award problems. This group appears to be primarily interested in pre-award, proposal development activity with some concern for post-award problems.

The third cluster consists of managers in the research development function (Table 1). Again, information (with 73% of the cluster respondents selecting this) is the primary task. General university management, however, is the second-most frequently selected task (53%). When a response rate of at least 30% is used as selection criterion, the tasks include planning and budgeting assistance, contract and grant management, and managing internal research funds. This last function does not appear in either of the other two clusters, but its inclusion further suggests the manager's resource allocation role.

Job Goals. To further identify differences among the clusters, mean scores were computed by cluster for each of the seven job goals (which had been designed to capture respondents' perceptions of their positions).

A five-point Likert scale ranging from very little importance (#1) to a great deal of importance (#5) was used to collect these data. Means were calculated for each cluster as well as for the entire group of respondents. The goals were rank-ordered within each cluster (see Table 2). Table 3, the means by sample and cluster show that except for Goal 6 (assisting faculty in

TABLE 2

RANKING OF GOALS BY SAMPLE AND CLUSTER

	Sample (N=108)	Information Specialists (N=22)	Research Development (N=45)	Research Manager (N=15)
1. Stimulating research and project activity	2	2	2	4
2. Assuring compliance with university policies	1	1	1	1
3. Designing university policies regarding research and project activity	4	4	4	2.5
4. Developing faculty grant-seeking skills	5	5	5	5
5. Developing faculty grant management skills	6	6	6	6
6. Assisting faculty in developing their careers	7	7	7	7
7. Increasing the number of grant awards	3	3	3	2.5

TABLE 3

MEAN SCORES OF GOALS BY SAMPLE AND CLUSTER

	Sample (N=108)	Information Specialists (N=22)	Research Development (N=45)	Research Manager (N=15)
1. Stimulating research and project activity	3.9	3.95	3.88	4.13
2. Assuring compliance with university policies	4.17	4.23	3.98	4.86
3. Designing university policies regarding research and project activity	3.41	3.73	3.4	4.53
4. Developing faculty grant-seeking skills	3.15	2.91	3.16	4.0
5. Developing faculty grant management skills	2.79	2.59	2.73	3.06
6. Assisting faculty in developing their careers	2.1	2.5	2.15	1.87
7. Increasing the number of grant awards	3.79	3.86	3.62	4.53

developing their careers), the research managers had a higher mean score for each goal. Table 3 also shows that the entire sample and the first two cluster groups rank the goals in exactly the same way, with each of the groups ranking Goal 2 (assuring compliance with university policies) as the most important. The management cluster similarly agrees with the top priority goal, but is distinguished from the other groups by its higher priority on designing university research policies and on increasing the number of grant awards. These higher priorities are understandable if one defines managers as charged with both policy development and accountability. The consequent lower ranking of research stimulation may be only a function of the priorities awarded other goals, or it may suggest that the specific tasks associated with research stimulation are delegated elsewhere.

Career Paths. Respondents' job histories for the two most recent positions were displayed on a frequency table indicating the job categories that best described their previous positions (see Table 4).

Of the 96 who responded to the question regarding the most recent position, 41 (43%) had been employed as research administrators immediately prior to their present position. Thirty-eight (40%) of the respondents had been in higher education research administration.

For those 55 (57%) who had not been research administrators in their most recent position, the largest group (23 or 38%) had been in general higher education administration. Others had been employed as higher education faculty. Beyond this initial large group, 8% had been faculty, business, or industry employees, and 8% in the "other" category. Government agency employees and clerical support staff had accounted for 4% each.

TABLE 4

PLACEMENT OF RESPONDENTS IN THEIR LAST TWO POSITIONS

	Most Recent (N=96)	Second Most Recent (N=90)
Research Administrator		
Higher Education	38	21
Industry	1	1
Government Agency	3	3
Other		
Higher Education Administration	22	14
Higher Education Faculty	8	20
Higher Education Support Staff	4	5
Business/Industry	8	12
Government Agency	4	3
Student	1	1
Other	8	10

To address the question of whether present research administrators had made a career commitment to the field, those 38 research administrators whose most immediate position had been as a research administrator were traced. Fifteen (39%) were in their third consecutive position as a research administrator (Table 5). Eleven (29%) had held faculty positions while the remainder were dispersed among higher education administration (11%), business or industry (11%), other (8%), or government agencies (5%).

Examining the patterns in light of Driver's (1977) four career concepts suggests that research administration may involve at least two and possibly three of the patterns he describes.

The most apparent is the linear concept which Driver defines as the standard upwardly mobile ladder. The 39% who had consecutive positions in research administration may be said to have a linear career path. Not enough data is available, however, to suggest whether the path is upwardly mobile. Indeed, the track may be lateral. The point made by this pattern is that at least one subgroup of research administrators has exhibited a long-term commitment to working in research administration. Further analysis may suggest that those who have moved from government agencies or business/industry may be similarly committed to the profession identified as research administration. The question of whether research administration is part of a more general higher education administration pattern that may also be linear remains to be analyzed.

Driver describes the spiral pattern as one in which individuals develop in one area then move onto another, perhaps related, area. The image of a spiral again implies an upward movement. However, Driver's example of John Gardner, former Secretary of HEW and founder of Common Cause, implies a lateral rather than an upward movement. Because a larger number of respondents (21) had been in research administration positions in their second-most recent position than

TABLE 5

SECOND MOST RECENT POSITIONS HELD BY
38 UNIVERSITY RESEARCH
ADMINISTRATORS

	Number	Percent
Research Administrator		
Higher Education	15	39%
Industry		
Government Agency		
Other		
Higher Education Administration	4	11%
Higher Education Faculty	11	29%
Higher Education Support Staff	4	11%
Business/Industry	2	5%
Government Agency		
Student	3	8%
Other		

had been in three consecutive research administration positions, some indication of a spiral pattern exists for those respondents who had apparently moved from research administration to something else then back. One may also ask if faculty who move into research administration positions are moving into a related field. Again, this question of the relationship between research administration positions and general administration arises.

Discussion

Even though these results must be viewed as preliminary, the data suggests conclusions in three areas.

Differences in Demographic Data

The data prescribed here show that 47% of the respondents hold terminal degrees, thus differing from an earlier study of the Society of Research Administration membership (Rodman and Dingerson, 1979) which indicated that members were as likely to hold bachelors degrees as Ph.D's. This difference along with the fact that only 12% of the respondents report to the fiscal vice-presidents suggests at least three possibilities: (1) the membership of NCURA differs from that of SRA in education and possibly job function; (2) the early respondents in this study differ from the general membership; and (3) fiscal matters are treated organizationally as a support function for academic goals and consequently accounting/business respondents also report to academic units.

Job Definitions

The groupings in the job clusters show both commonalities and differences. Some job functions appear in more than one cluster (information regarding funding agencies, budgeting, planning proposals, contacting funding agencies,

and contract and grant management) suggesting that perhaps a common core of of subject matter and skills exist for research administrators. This suggestion has implications for those interested in developing training programs for research administrators. The differences in combinations of tasks, the inclusion of tasks unique to a particular cluster, and the apparent differences in commitment to and priority of job goals indicates there may be differences by position in the organization.

The managers group, for example, seems more oriented towards policy development, accountability, and resource allocation presenting a pragmatic and realistic view of higher education administrators.

Goals

The apparent agreement among all clusters that compliance with university policy is the primary goal of research administration seems to reflect the historical function of research administrators as checking grant proposals against both funding agency and university policies. Further, the inclusion of contract and grant management as an identified job task reinforces the importance placed on compliance.

What is more interesting is that the goals of stimulating research and project activity and increasing the number of grant awards are ranked as second and third, while developing faculty careers is ranked seventh. From another perspective, those three goals that relate to developing faculty skills or careers (developing faculty grant-seeking and grant management skills, developing faculty careers) rank at the bottom. These rankings raise questions regarding the relationships between global organizational goals and specific faculty skills. The rankings may be a function of the goals as defined, may suggest

that the faculty need no development in the three areas listed, or may suggest that research administrators are narrowing their purview in a way that is limiting to the research development function.

Careers

The initial data suggest that research administrators career paths may fall into at least two of Driver's four concepts: linear and spiral. In addition, the number of anomolous cases indicate that research administration may have a number of transients, e.g. those who moved from students to entry-level research administration positions and onto being housewives, consultants, or attorneys.

Further analysis will allow exploration of the relationship between research administration positions to other higher education professions.

Conclusion

The initial returns suggest that analysis of the final data will show different research administration tracks. If in fact the three separate clusters continue to be supported, they will indicate that three distinct, perhaps linear, positions are available within the general field of research administration. The question of the relationships between these and other higher education positions will have to be explored.

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